

Serial No.: 10/540,110
Atty. Docket No.: P70551US0

REMARKS

The Office Action mailed April 14, 2009, has been carefully reviewed and Applicant notes with appreciation the identification of allowable subject matter.

By this Amendment, claims 1-24 have been amended. Claims 1-24 are pending in the application. Claims 1 and 10 are independent.

The Examiner objected to the claims as containing informalities which Applicant has corrected herein. Withdrawal of the objection is therefore requested.

The Examiner rejected claims 1-24 under 35 U.S.C. 112, second paragraph, as being indefinite. With the amendments set forth herein, the claims are in conformity with 35 U.S.C. 112, second paragraph. Favorable reconsideration and withdrawal of the rejection is therefore requested.

The Examiner rejected claims 1-9 under 35 U.S.C. 101 as being directed to non-statutory subject matter. As amended herein to recite additional structure, claim 1 is clearly tied to a statutory class, namely a method for use with an extracorporeal blood treatment device. Therefore, claims 1-9 are statutory under 35 U.S.C. 101. Withdrawal of the rejection is requested.

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The Examiner rejected claims 1, 2, 5, 10, 16 and 21-24 under 35 U.S.C. 102)b) as being anticipated by EP 0 928 614 to Gotch et al. ("Gotch"). Under 35 U.S.C. 103(a), the Examiner also rejected claim 3 as being unpatentable over Gotch in view of U.S. Patent No. 4,894,164 to Polaschegg, rejected claims 11-13 as being unpatentable over Gotch in view of U.S. Patent No. 5,685,989 to Krivitski et al. ("Krivitski"), and rejected claim 14 as being unpatentable over Gotch in view of Krivitski and further in view of Polaschegg. The Examiner objected to claims 4, 6-9, 15 and 17-20 as being dependent on a rejected base claim but stated that claims 4, 6-9, 15 and 17-20 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph, and in independent form including all of the limitations of the base claim and any intervening claims.

While Applicant appreciates the identification of allowable subject matter, reconsideration of claims 1 and 10 as also being in condition for allowance, along with all of the remaining claims as dependent thereon, is requested.

As clarified in amended claims 1 and 10, the present invention is directed to a method and device for determining a blood flow rate Q_F in a blood-carrying line that is coupled to an extracorporeal blood treatment device through an arterial line and

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a venous line. A portion of blood in the blood-carrying line is branched off at a first location through the arterial line and is returned to the blood-carrying line at a second location through the venous line such that the subject portion of blood passes from the arterial line to the extracorporeal blood treatment device and then to the venous line. The method includes the step of determining a physicochemical variable Y of the blood, which is constant over a period of time for a measurement interval, in the arterial line upstream of the extracorporeal blood treatment device as having value Y_A and in the venous line downstream of the extracorporeal blood treatment device as having value Y_V . The method continues by determining a net rate dX/dt of a variable X derived from the physicochemical variable Y into or out of the blood-carrying line during the measurement interval from the values Y_A and Y_V as a difference between rate dX_A/dt as measured in blood removed from the blood-carrying line through the arterial line and rate dX_V/dt as measured in blood supplied back to the blood-carrying line through the venous line. The net rate dX/dt is then used to determine the blood flow rate Q_F in the blood-carrying line. This is not shown or suggested by Gotch.

Gotch is directed to a method and apparatus for determining a hemodialysis parameter on the basis of multiple

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dialysance values which may be calculated based on sodium or urea concentrations. As is clear from Gotch, the dialysance values are determined solely from concentration measurements *made on the dialysate side of the dialysis apparatus* (see the Abstract, for example). Hence, Gotch is looking at properties of the dialysate fluid, and not blood properties. While there are passages in Gotch which relate to blood properties (see Equation 24), these passages do not teach or suggest the parameter relations set forth in claims 1 and 10 of the present invention by which a physicochemical variable Y of the blood is determined in the arterial line Y_A and in the venous line Y_V , a net rate dX/dt is determined of a variable X derived from the physicochemical variable Y into or out of the blood-carrying line during a measurement interval from the values Y_A and Y_V as a difference between rate dX_A/dt as measured in blood removed from the blood-carrying line through the arterial line and rate dX_V/dt as measured in blood supplied back to the blood-carrying line through the venous line, and the net rate dX/dt is then used to determine the blood flow rate Q_F in the blood-carrying line.

For at least the foregoing reasons, claims 1 and 10 are patentable over Gotch, either taken alone or in combination with

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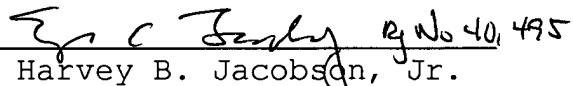
the other references. Favorable reconsideration and allowance of claims 1 and 10 is requested.

Claims 2-9 and 11-24 are in condition for allowance as claims properly dependent on an allowable base claim and for the subject matter contained therein.

With the foregoing amendments and remarks, the application is in condition for allowance. Should the Examiner have any questions or comments, the Examiner is cordially invited to telephone the undersigned attorney so that the present application can receive an early Notice of Allowance.

Respectfully submitted,

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